

Inside Wallops

National Aeronautics and Space Administration
Goddard Space Flight Center

Wallops Flight Facility, Wallops Island, Va. Volume XX-05

Number 33

September 19, 2005



Aerosonde UAV Makes Historic Flight from Wallops

The NASA Wallops Flight Facility, Aerosonde North America and the NOAA Atlantic Oceanographic and Meteorology Laboratory (AOML) in Miami teamed to mark a new milestone in hurricane observation on September 16 when the Aerosonde UAV flew into Tropical Storm Ophelia providing the first-ever detailed observations of the near-surface, high wind hurricane environment, an area often too dangerous for manned aircraft to observe directly.

"It's been a long road to get to this point, but it was well worth the wait," said Joe Cione, NOAA hurricane researcher at AOML and the lead scientist on this project. "If we want to improve future forecasts of hurricane intensity change we will need to get continuous low-level observations near the air-sea interface on a regular basis, but manned flights near the surface of the ocean are risky. Remote unmanned aircraft such as the Aerosonde are the only way. Today we saw what hopefully will become 'routine' in the very near future."

"We were excited to be a part of the Ophelia mission. This flight was an excellent use of NASA's Research Range in that we were able to demonstrate progressively complex flight procedures and guidance systems. That validation allowed us to be very comfortable with the UAV and ground systems prior to deploying into an active storm. The results of that approach were spectacular," said Jay Pittman, chief of the Wallops Range and Mission Management office.

The Aerosonde was launched from Wallops at about 7:30 a.m. EDT on Friday and returned at 5:25 p.m. "in pristine condition," according to Peter Bale with Aerosonde North America.

"The concept of the Aerosonde as a small, robust unmanned autonomous vehicle, or UAV, arose directly from our need for observations in dangerous areas such as the hurricane surface layer," said Greg Holland, president of Aerosonde North America.



Photo by Lee Wingfield

The Aerosonde unmanned aerial vehicle is released from its transport vehicle on the runway at Wallops.

While the successful use of satellites and aircraft have been important tools in the arsenal to understand tropical cyclones, detailed observations of the near-surface hurricane environment have been elusive because of the severe safety risks associated with low level manned flight missions and the inability of satellites to provide the needed measurements.

The Aerosonde project addresses this significant observational shortcoming by using the unique long endurance and low-flying attributes of the unmanned Aerosonde observing platform, flying at altitudes as low as 500 feet.

Tropical Storm Ophelia provided the perfect test case for using the Aerosonde UAV as it

was a minimal hurricane within flight range of the Wallops Flight Facility.

The Aerosonde platform that flew into Ophelia was specially outfitted with instruments used in traditional hurricane observation, such as a mounted Global Position System (GPS) dropwindsonde and a satellite communications system that relayed information on temperature, pressure, humidity and wind speed every half second in real-time.

The Aerosonde also carried a downward positioned infrared sensor that was used to estimate the underlying sea surface temperature.

Data was transmitted in near-real time to the NOAA National Hurricane Center and AOML. NASA and Aerosonde monitored and controlled the flight from Wallops.

The environment where the atmosphere meets the sea is critically important in hurricanes. This is where the ocean's warm water energy is directly transferred to the atmosphere just above it. The hurricane/ocean interface also is important because it is where the strongest winds in a hurricane are found.

This first flight provided detailed documentation of an unsampled region of the hurricane while simultaneously providing the NOAA National Hurricane Center with real-time near surface wind and thermodynamic data from within Tropical Storm Ophelia.

In addition, detailed comparisons between in-situ and satellite-derived observations also will be possible.

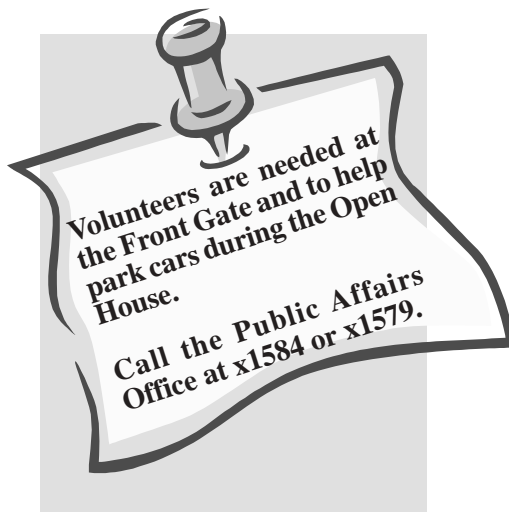
It is envisioned that this unique data could ultimately be used to help initialize and verify both operational and research-oriented numerical simulations.

NASA Wallops Flight Facility 1945 – 2005

From 1975 – 1981

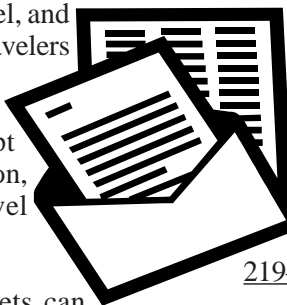
Wallops was known as the Wallops Flight Center.

While continuing to act as a launch site for suborbital and orbital vehicles, Wallops expanded its horizons to include studies of Earth and ocean processes and the use of Wallops research airport for runway surface and aircraft noise reduction studies.



Travelers Will No Longer Receive Information Packets

CI Travel books airline, hotel, and rental car reservations for travelers and provides a “travel packet” that contains an itinerary, hotel tax exempt form, rental car information, and a Worksheet for Travel Voucher.



Travel itineraries and tickets can now be provided electronically for all domestic travel. Beginning October 1, CI Travel will no longer issue these travel packets.

The information in the travel packets can be found at the following websites: tax

exempt form and Worksheet for Travel Voucher:

<http://travelmanager8.gsfc.nasa.gov/documents.html>

and rental car information:

<http://www.mtmc.army.mil/frontdoor/o.1865.OID=3-215-219-210.00.html>

Paper tickets for international flights will be issued from the CI Travel’s onsite office in Building E-105.

For more information about this new process, contact Tim Abbott at x1647 or by email: Timothy.V.Abbott@nasa.gov

Women of Wallops Special Event

“How to be one of the boys when you are one of the girls”

Featuring: Peggy Naleppa, Executive Vice President, Chief Operations Officer Peninsula Regional Medical Center

September 21, 2005
11:30 a.m. to 12:30 p.m.
Building E-2, Williamsburg Room

Luncheon – \$6 per person
Menu: Chef’s Salad w/Chicken, Dessert, Assorted Dressings, Rolls, Beverage

For tickets contact Markita Bivens at x1252 or the Wallops Exchange at x2020



UNDER CONSTRUCTION

Site Work This Week: There will be a continuation of the fill and compaction effort. Noise should continue at the current level. Yes, more beeping. Hopefully, some of the initial underground utility work will begin by the latter part of the week with the addition of backhoes on site.

UNDER CONSTRUCTION

Wallops Shorts.....

Launch

A NASA scientific balloon was launched from Ft. Sumner, N.M., on September 13.

The 3.46 million cubic foot balloon carried the Air Mass Zero instrument to calibrate ground-based solar-simulator reference photo-voltaic cells at air mass zero altitudes. The instrument carried 46 photovoltaic cells pointed directly at the sun and is mounted at the apex of the balloon.

Dr. Roger Helizon, Jet Propulsion Laboratory, was the principal investigator.

Total flight time was 6 hours 8 minutes.

Aerobics Club

The Wallops Aerobics Club announces the start of a new session of step aerobics, toning and Ta’i Chi Ch’uan.



For more information, call Anita Speidel at 824-0130 x47, or Clayton Wetzel at x1648, or check out the Wallops Aerobics Club web page at: <http://www.wff.nasa.gov/WAC/>

Job Opening

NASA Wallops Flight Facility has the following vacancy announcements out for a GS-13 General Engineer (AST, Experimental Facilities Development): Vacancy Announcement Numbers GS05C0451 & GS05B0454.

The closing date to apply for these announcements is September 29, 2005.

To view, go to the NASA jobs website at <http://www.nasajobs.nasa.gov/> Once on the site, proceed to “Search Jobs” and then enter the respective vacancy announcement number(s).

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

Editor
Asst. Editor

Betty Flowers
Rebecca Hudson